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Water for Living



2006 Drinking Water Consumer Confidence Report

Division of Power and Water
Greater Columbus Area

City of Columbus
Division of Power and Water
910 Dublin Road
Columbus, OH 43215



Your 2006 Water Report

The goal of the Division of Power and Water is to ensure that any contaminants in your drinking water are restricted below a level at which there is no known health risk. This report shows the types and amounts of key elements in your water supply, their likely sources and the maximum contaminant level (MCL) that the EPA considers safe.

The water delivered to your home meets ALL of the requirements of the Safe Drinking Water Act (SDWA). We use a complex, multi-barrier treatment process to assure safe drinking water is delivered to our customers. If, for any reason, the standards are not met, the public will be notified.

*If you have any questions about this data please call the **Columbus Water Quality Assurance Lab** at (614) 645-7691, or www.columbuswater.org*

Sewer and Water Advisory Board

In 1984, the City of Columbus formed the Columbus Sewer and Water Advisory Board to oversee the operations and rate structures of both the Divisions of Power and Water and Sewerage and Drainage. The board, comprised of city officials and six Columbus residents who represent different constituencies — such as senior citizens and the business community — meets quarterly to advise the Divisions on business decisions and best practices. Chaired by Ohio State University's Wallace Giffen, the board forwards their recommendation to Columbus City Council, who then deliberate to officially set rates or change fundamental policy.

The Sewer and Water Advisory Board meetings are open to the public. Call (614) 645-3956 for a schedule of meeting times and dates.



Contact Us

**City of Columbus
Division of Power and Water**
910 Dublin Road
Columbus, OH 43215

Water Quality Assurance Laboratory
(614) 645-7691

- Water Quality Monitoring Questions
- Regulatory Inquiries
- Taste/Odor/Colored Water Concerns

Customer Service
(614) 645-8270

- Customer Billing Inquiries
- Account Set-up/Finalization
- Schedule Service Calls
- Process Bill Payments

Distribution/Maintenance
(614) 645-7788

- Water Emergencies (evenings/weekends)
- Report Waterline Breaks
- Report Hydrant damage or leaks

This report can also be found on our website at www.columbuswater.org
Just click on "Consumer Confidence"

City of Columbus
Michael B. Coleman
Mayor

Department of Public Utilities
Tatyana Arsh, P.E.
Director

Division of Power and Water
Richard C. Westerfield, P.E., PhD.
Administrator



311 Call Center

The Call Center is the single point of contact for requesting all non-emergency City services and is available to residents, City businesses, and visitors. Just dial 3-1-1 (or 614-645-3111), or visit on the web at www.311.columbus.gov.



Get Green Columbus

Sets forth the city's commitment to making Columbus a greener place to live. Visit www.getgreencolumbus.org to learn more.

This report meets the EPA's National Primary Drinking Water Regulation for Consumer Confidence Reports.

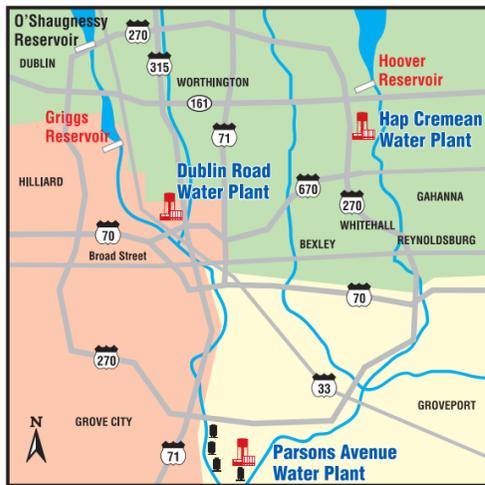
The Distribution Map

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Each home, school and business in the greater Columbus area receives water from one of the following three water plants:

Dublin Road Water Plant (DRWP) serves northwest and southwest residents using water from the Griggs and O'Shaughnessy Reservoirs.

Hap Cremean Water Plant (HCWP) serves OSU and northern residents. The source is the Hoover Reservoir.

Parsons Avenue Water Plant (PAWP) draws water from wells and serves residents in the southeast.



What's NOT in Your Water

Reports in the media often raise concerns about the health risks associated with the presence of certain minerals, chemicals, or other contaminants in your food or water. The Columbus Division of Power and Water performs thousands of tests each year to ensure drinking water quality. Many substances, for which the Division tests, never appear in this report because they are not found in the drinking water. For example, there are 51 volatile organic chemicals as well as arsenic, perchlorate, asbestos, MTBE, radium 228, and ammonia (just to name a few) that are **NOT** found in your drinking water.

Contaminants that may be present in source water include: microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife; inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming; pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses; organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems; radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, USEPA prescribes regulations which limit the amount of certain contaminants in drinking water provided by public water systems. FDA regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at 1(800) 426-4791.

Newborns and Nitrate

Nitrate in drinking water at levels above 10 ppm is a health risk for infants less than six months of age. Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and if untreated, may die. Symptoms include shortness of breath and blue-baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. Local television, radio and print media will be notified within 24 hours if the level of nitrate rises above 10 ppm. The media will similarly be notified once the level decreases. If you are caring for an infant you should ask advice from your health care provider.

The Dublin Road Water Plant exceeded the nitrate MCL of 10 ppm from May 23rd to May 31st of 2006. Water from the HCWP and PAWP did not exceed the MCL in 2006.

Primary Drinking Water Standards

Substances we detected	When we checked	What's allowed? (MCL)	What's the goal? (MCLG)	DRWP		HCWP		PAWP		Violation?	Where did it come from?
				Level Found	Range of Detection	Level Found	Range of Detection	Level Found	Range of Detection		
Fluoride (ppm)	2006	4	4	1.09	0.94-1.09	1.17	0.80-1.17	1.14	0.93-1.14	No	Water additive – protects teeth
Nitrate (ppm)	2006	10	10	12.0 ¹	<0.5-12.1	1.8	0.7-1.8	ND	ND	Yes ¹	Agricultural fertilizer runoff
Simazine (ppb)	2006	4	4	0.22	<0.10-1.00	0.68	<0.10-1.05	ND ²	ND ²	No	Agricultural herbicide runoff
Atrazine (ppb)	2006	3	3	0.76	<0.10-2.01	0.74	<0.10-1.42	ND ²	ND ²	No	Agricultural herbicide runoff
Alachlor (ppb)	2006	2	0	ND	ND	ND	ND	ND ²	ND ²	No	Agricultural herbicide runoff
Metolachlor (ppb)	2006	No set level	No goal set	0.21	<0.20-0.69	<0.20	<0.20-0.28	ND ²	ND ²	No	Agricultural herbicide runoff
Metribuzin (ppb)	2006	No set level	No goal set	<0.10	<0.10-0.19	<0.1	<0.1-0.12	ND ²	ND ²	No	Agricultural herbicide runoff
Chloroform (ppb)	2006	No set level	0	9.6	N/A	25.7	N/A	1.9 ²	N/A	No	By-product of drinking water disinfection
Bromodichloro-methane (ppb)	2006	No set level	0	5.8	N/A	8.2	N/A	4.0 ²	N/A	No	By-product of drinking water disinfection
Dibromochloro-methane (ppb)	2006	No set level	60	1.8	N/A	1.4	N/A	5.8 ²	N/A	No	By-product of drinking water disinfection
Bromoform (ppb)	2006	No set level	0	< 0.5	N/A	< 0.5	N/A	2.6 ²	N/A	No	By-product of drinking water disinfection
Total Trihalo-methanes (ppb)	2006	80	No goal set	56.2	21.9-103.0	55.1	22.0-83.2	15.5	10.1-25.6	No	By-product of drinking water disinfection
Total Haloacetic Acids (ppb)	2006	60	No goal set	51.9	24.2-97.3	50.4	34.3-60.5	5.6	3.1-11.8	No	By-product of drinking water disinfection
Total Alpha (pCi/L)	2003	15	0	< 3	N/A	< 3	N/A	< 3 ³	N/A	No	Erosion of natural deposits
Total Beta (pCi/L)	2003	50	0	8.5	N/A	4.6	N/A	N/A	N/A	No	Decay of natural and man-made deposits
Total Organic Carbon	2006	TT (removal ratio >1)	No goal set	2.23	1.70-2.63	2.01	1.76-2.38	N/A	N/A	No	Naturally present in environment
Total Coliform Bacteria	2006	Present in <5% of monthly samples	0%	0.7% ⁴	0-0.7%	0.0%	0.0-0.0%	0%	0.0-0.0%	No	Bacteria present in environment
Total Chlorine (ppm)	2006	4 (MRDL)	4 (MRDLG)	1.52	0.38-2.16	1.62	0.33-2.70	1.08	0.21-2.01	No	Disinfectant
Turbidity (NTU)	2006	TT (<1 NTU)	No goal set	0.58	0.03-0.58	0.18	0.04-0.18	N/A	N/A	No	Soil runoff
Nickel (ppb)	2006	100	100	21.0	N/A	ND	N/A	ND ²	N/A ²	No	Erosion of natural deposits, electroplating, alloying, mining and refining operations

Substances we detected	When we checked	Action Level (AL)	What's the goal? (MCLG)	Concentration at 90 th percentile	Range	# of sites found above the Action Level	Violation?	Where did it come from?
Lead (ppb)	2005	15	0	< 1	< 1 – 30.6	1 out of 50	No	Corrosion of household plumbing
Copper (ppm)	2005	1.3	1.3	0.059	0.002 – 0.070	0 out of 50	No	Corrosion of household plumbing; Erosion of natural deposits

¹ Nitrate Violation: May 23rd to May 31st of 2006, drinking water from the Dublin Road Water Plant exceeded the nitrate MCL of 10 ppm. Water supplied by the Hap Cremean and Parsons Avenue Water Plants did not exceed the MCL.

² 2005 Data. Not required to monitor in 2006.

³ 2002 Data. Not required to monitor in 2006.

⁴ One (1) sample out of 145 in August 2006 indicated the presence of coliform bacteria = 1/1568 for the year.

Other Water Quality Parameters of Interest

Substances we detected	When we checked	What's allowed? (MCL)	What's the goal? (MCLG)	DRWP		HCWP		PAWP		Violation?	Where did it come from?
				Annual Average	Range	Annual Average	Range	Annual Average	Range		
pH (units)	2006	7.0-10.5 (SMCL)	No goal set	7.8	7.6 – 7.8	7.8	7.6 – 7.9	7.8	7.7 – 7.9	Treatment process	
Hardness (ppm)	2006	No set level	No goal set	118	117 – 120	114	106 – 119	122	120 – 123	Naturally occurring	
Sodium (ppm)	2006	No set level	No goal set	52	38 – 75	15	12 – 23	61	53 – 68	Natural/Treatment process	

Definitions and Terms

Action Level (AL)	The concentration of a contaminant, which if exceeded, triggers treatment or other requirements that a water system must follow.
Maximum Contaminant Level Goal (MCLG)	The level of a contaminant in drinking water, below which there is no known or expected health risk. MCLGs allow for a margin of safety.
Maximum Contaminant Level (MCL)	The highest level of contaminant that is allowed in drinking water. MCLs are set as close to the MCLG as feasible using the best available treatment technology.
Secondary MCL (SMCL)	A nonenforceable numerical limit set by the USEPA for a contaminant on the basis of aesthetic effects to prevent an undesirable taste, odor, or appearance.
N/A	Not Applicable
ND	No Detect
NTU	Nephelometric Turbidity Unit (a measure of particles held in suspension in water.)
Parts per Billion (ppb) or Micrograms per Liter (ug/L)	Are units of measurement for concentration of a contaminant. A part per billion corresponds to one second in roughly 31.7 years.
Parts per Million (ppm) or Milligrams per Liter (mg/L)	Are units of measurement for concentration of a contaminant. A part per million corresponds to one second in roughly 11.5 days.
pCi/L	Picocuries per liter (a measure of radiation.)
MRDL	Maximum Residual Disinfectant Level
MRDLG	Maximum Residual Disinfectant Level Goal
The ">" symbol	This symbol means "greater than."
The "<" symbol	This symbol means "less than." For example, a result of < 5 means that the lowest level that could be detected was 5 and the contaminant in that sample was not detected.
Treatment Technique (TT)	A required process intended to reduce the level of a contaminant in drinking water.
Turbidity	Is a measurement of the cloudiness of the water. We monitor turbidity because it is a good indication of water quality and the effectiveness of our treatment process.

Lead in the Home

The lead concentration in the drinking water leaving our water treatment plants is below the level of detection. However, lead can enter the water from household brass fixtures, lead pipes, or lead solder, when water resides in the plumbing for more than six hours. Most homes in the Columbus area do not have lead service lines and have little to no detectable levels of lead in their tap water. Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested. Additionally, flush your tap water for at least two (2) minutes before using it. More information is available from the Safe Drinking Water Hotline at 1(800) 426-4791, or call (614) 645-8270 for your free copy of "What You Need to Know About Lead in Drinking Water."

Turbidity

Utilities that treat surface water and filter the water are required to monitor for turbidity which is a measure of the cloudiness of water and is an indication of the effectiveness of our filtration system. The turbidity limit set by the EPA is 0.3 NTU in 95% of the daily samples and shall not exceed 1 NTU at any time. The highest recorded turbidity for HCWP was 0.18 NTU and the lowest monthly percentage of samples meeting the standard was 100%. The highest recorded turbidity for DRWP was 0.58 NTU and the lowest monthly percentage of samples meeting the standard was 98%.

Total Organic Carbon

The value reported under "Level Found" for Total Organic Carbon (TOC) is the lowest running annual average ratio between the percentage of TOC actually removed to the percentage of TOC required to be removed. A value of greater than one indicates that the water system is in compliance with TOC removal requirements. A value of less than one indicates a violation of the TOC removal requirements. The value reported under "Range" for TOC is the lowest monthly ratio to the highest monthly ratio.

Health Concerns/ Water Quality Testing

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised individuals such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, persons with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infection. These people should seek advice from their health care providers about drinking water.

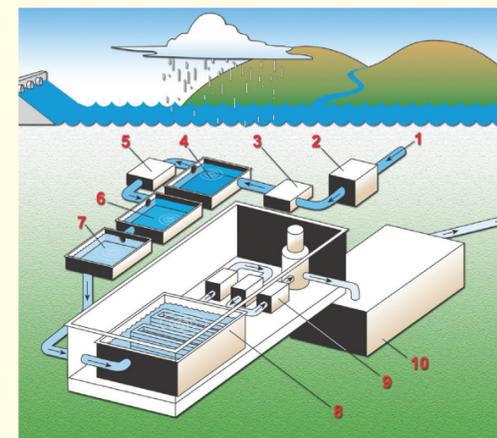
Cryptosporidium ("Crypto"), for example, is a microscopic organism that, when ingested, can result in diarrhea, fever, and other gastrointestinal symptoms. Crypto comes from animal wastes in the watershed and may be found in our source water. Crypto is eliminated by using a multi-barrier water treatment process including coagulation, sedimentation, softening, filtration and disinfection. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the *Safe Drinking Water Hotline* at 1(800) 426-4791.

Columbus' water is regularly tested for organisms that could be harmful to people — including Cryptosporidium. While it is sometimes found in Ohio rivers and streams, Crypto has **NEVER** been found in our finished drinking water.

In 2006, the Water Quality Assurance Lab's (WQAL) EPA licensed and certified laboratory staff completed over 40,000 analyses relating to 29 different organic, inorganic, and microbiological water quality parameters.

As with the WQAL staff, the State of Ohio licenses and certifies the water plant operators who are charged with running and maintaining each of the three water treatment plants. These operators also perform the critical task of treatment and process monitoring to insure that the water leaving the plant is of the highest quality.

Safe and reliable water is our duty to the citizens of Columbus and the surrounding metro area, and it is one which we take most seriously. Hundreds of tests per day, ranging from the upper most reaches of the Columbus watershed, to the plants and the treatment process, throughout storage tanks and the entire distribution system, and right up to the tap take place to ensure that Columbus water is safe, reliable, and always there for you.



The Water Treatment Process

We treat water as a precious resource

Water flows (1) to the treatment plant from the reservoir or stream through rotating screens (2) to remove large debris. It is then pumped into the plant where alum is added (3) to cause coagulation. After rapid mixing, the water remains in the settling basin (4) while sedimentation of floc occurs (2-4 hours). The water treatment residual (settled floc) is pumped from the bottom of the pools and stored in holding lagoons to dry. The softening process (5) involves the addition of sodium carbonate (soda ash) or caustic soda and hydrated lime to remove calcium and magnesium ions that are responsible for water hardness. This process takes an additional 2-4 hours. For each pound of chemical used in the treatment process, two pounds are removed. After an additional sedimentation process, carbon dioxide is added (6) to lower the pH level to approximately 7.8. Water is held in a stabilizing basin (7) for another 2-4 hours. Water then flows through large dual-media rapid sand filters made up of layers of gravel, sand and anthracite coal (8). Addition of chlorine to disinfect the water, fluoride to protect teeth and a corrosion inhibitor take place at the end of the process (9) before water enters large underground clearwells (10) to be held until needed by the community.

Please note: When ground water is used (as in the case of the Parsons Avenue Water Plant), neither screening (2) nor initial sedimentation (3,4) is needed.

Source Water Assessment Information

A high-quality source water supply allows the Division of Water to provide consumers with quality water at a reasonable cost. Protecting our raw water sources requires investments to secure the needs of a growing population, now and in the future. As part of its ongoing efforts to maintain regulatory compliance and monitor our water supply, the Division of Water has completed a Source Water Assessment process. Below is a synopsis of the results: The City of Columbus water system uses surface water from the Scioto River and Big Walnut Creek, as well as ground water pumped from sand and gravel deposits of the Scioto River Valley. All three sources of water have a relatively high susceptibility to contamination from spills or releases of chemicals. The ground water pumped at the Parsons Avenue plant is susceptible (compared to other ground water systems) because there is no significant clay overlying and protecting the aquifer deposits. The Scioto River and Big Walnut Creek are even more susceptible because they are more accessible and less protected from spills. The drinking water source protection areas for the City of Columbus' three water sources contain numerous potential contaminant sources, especially the protection area for the Dublin Road Water Treatment Plant (extending along the Scioto River). These include industrial activities, storm water runoff from developing areas, and a heavily traveled transportation network running alongside and over the water bodies. Run-off from agricultural fields is a concern in both the Scioto River and Big Walnut Creek watersheds. The City of Columbus treats the water to meet drinking water quality standards, but no single treatment protocol can address all potential contaminants. The City has been proactive in pursuing measures to further protect its source waters. These include land stewardship programs and incentive-driven programs to reduce erosion and run-off of pesticides and fertilizers into the Scioto River and Big Walnut Creek and their reservoirs. More detailed information is provided in the City of Columbus' Drinking Water Source Assessment Report, which can be viewed by calling the Watershed section at (614) 645-1721.

